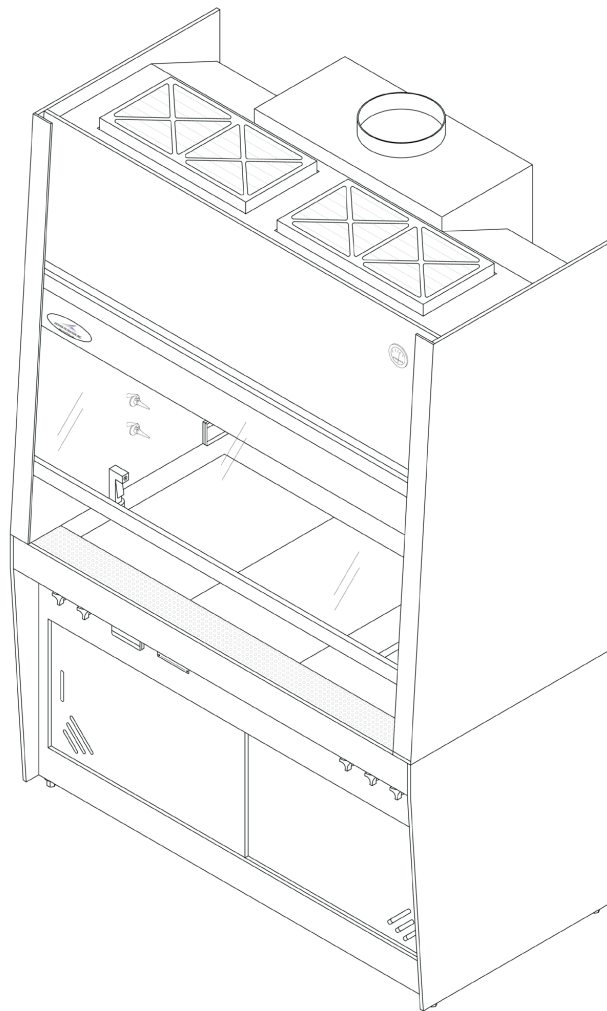




DESIGN FILTRATION INC.

Installation and Operation Manual

Total Exhaust Hood



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TOTAL EXHAUST HOOD

Thank you for purchasing our Total Exhaust Hood. With proper care and maintenance your hood will provide you with many years of trouble free performance.

Please read instructions carefully before installing and operating your Total Exhaust Hood.

WARNING: To reduce risk of fire, electric shock, or injury to persons please review the following precautions.

- Do not expose your hood to rain or moisture.
- Always disconnect the Total Exhaust Hood from power supply when servicing, moving parts may cause serious injury.
- Always disconnect while grasping the plug, not the cord.
- Do not block airflow to top of unit (allow at least 5" above unit).
- Do not expose your hood to gaseous or explosive vapors. Motors normally spark and may ignite fumes.
- Do not modify the plug of your hood if it will not fit in your duplex outlet. Have a proper outlet installed by a qualified electrician.
- Use only specified replacement parts recommended by Design Filtration.
- Use this equipment only in the manner intended by Design Filtration.

1. Shipping and Un-Crating

Your Total Exhaust Hood normally is shipped in two sections; smaller units may come fully assembled. Units should be stored in heated conditions of between 4°C (40°F) and 32°C (90°F) to avoid undue structural fatigue and damage.

Each unit is factory tested for airflows and filter leaks prior to shipping. On occasion damage can occur during the transportation of your new Total Exhaust Hood. Carefully remove the crating from your hood and inspect for damage that may have been caused and report it immediately to your transportation company.

All shipments are F.O.B. Design Filtration Inc. You must file a claim directly with the freight carrier. Design Filtration Inc. and its dealers are not responsible for shipping damages.

2. Installation

Once in location it is recommended that your hood be re-tested for airflows and leaks by an independent testing organization with technicians trained in the evaluation and maintenance of HEPA filtered equipment. Always use safe lifting guidelines when installing your hood on a base frame or existing work bench.

Do not use a lift truck when moving your Total Exhaust Hood. Leave your hood on the shipping skid until it is in its final installation location. Never lift from the centre of the hood. Allow hood to acclimatize to room temperature, before installation.

WARNING:

Allow 24 Hrs for Hood to
Acclimatize Before Installation,
to Prevent Damage to Hood.

WARNING:

Always Lift from the
Outside Edges of Hood
to Prevent Damage.

Do Not Use Fork Lift
on Center of Hood.

Your Total Exhaust Hood is shipped to you in four pieces. To start, locate the base frame as close to the final area as possible, allowing enough space for the head section and personnel to move freely around the front or back.

Place the wood blocks supplied, angled across the corners of the work surface, as shown in Figure 2.1. Raise the head section keeping as straight as possible. Move head section over base, and gently lower on the wood pieces, avoiding damage to fingers. Lifting one end at a time remove wood spacers and lower to base section, aligning connection screws as shown.

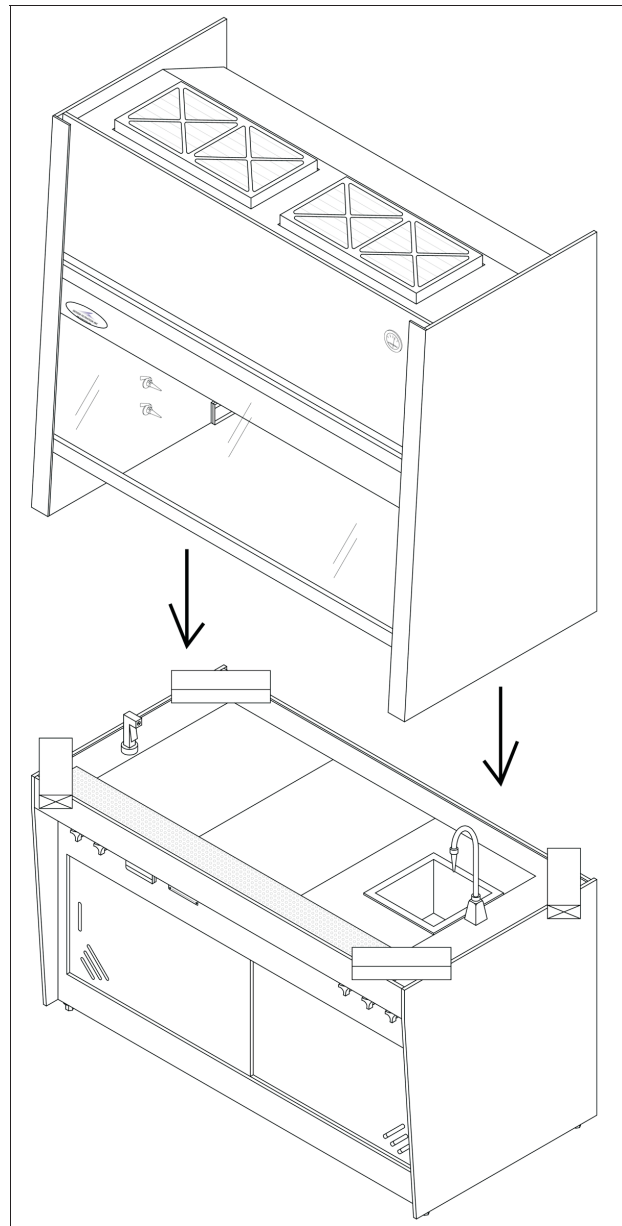


Figure 2.1

Lift rear plenum and align with pre-drilled holes, see Figure 2.2. Insert all of the screws before tightening them. Connect plastic tubing to fitting on transition. Supply fans will not run unless tubing is connected.

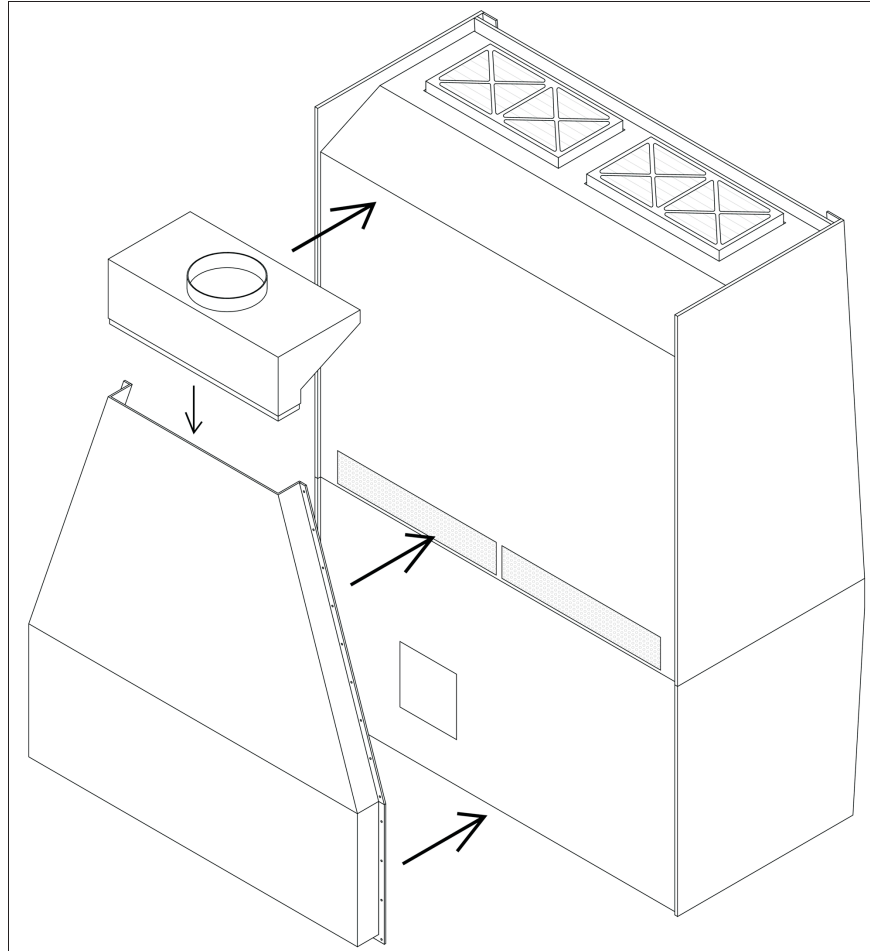


Figure 2.2

3. Pre-filter

Your Total Exhaust Hood is equipped with disposable pre-filters, which are manufactured from a bonded synthetic media set into a moisture resistant beverage board. Pleated pre-filters carry an efficiency rating of MERV 7 (Minimum Efficiency Reporting Value). The filters also provide an Average Atmospheric Dust Spot Efficiency of 25-30% to ASHRAE Test Standard 52.1

4. Pre-filter Maintenance

Please check your pre-filters on a monthly basis and change as necessary. To change your pre-filter simply remove old pre-filters and replace with new pre-filters. No tools are required

5. HEPA Filter

Your Total Exhaust Hood features a 5.88" deep wood frame filter with a separatorless type media to provide excellent even airflows. The wet laid glass media is set into the frame with a urethane seal. Efficiency is 99.99% at 0.3-micron particle size and larger. HEPA filters cannot be cleaned and must be replaced when necessary, consult factory for replacement filters.

6. ULPA Filter

The optional ULPA filter is rated 99.9995% at 0.12-micron particle size and larger. Other features as per HEPA filter. ULPA filters cannot be cleaned and must be replaced when necessary.

7. Changing HEPA / ULPA Filters

Before beginning to change your HEPA Filter, disconnect your hood from power source. Carefully remove front access panel to reveal interior compartment.

Loosen threaded rods at front and rear of fan filter module. Unscrew and remove polypropylene front locating bar. Remove ¼-20 nuts from rear clamping mechanism. Unplug fan power cords from electrical outlet. Carefully slide fan filter module from housing (this may require two people.) Remove aluminum foil tape and separate the filter from motor housing. See Figure 7.1.

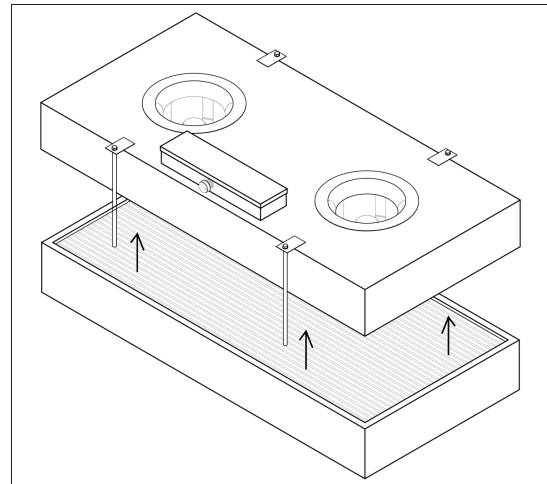


Figure 7.1

Carefully remove the new HEPA filter from crate. Using aluminum foil tape (do not use duct tape) complete at least 3 layers of tape joining the fan housing to the filter. Apply a thin layer of vacuum grease to gasket before re-installing the filter. Carefully lift and place filter back into the hood making sure the HEPA filter is not damaged. When tightening threaded rods, do not over tighten as these are only used to hold filter housing in place.

Once entire unit is re-assembled it must be tested and certified by a qualified certification company.

8. Changing the Fluorescent Light

Carefully remove the screws on the lense cover, remove the bulb and install new bulb with same type and color as original supplied.

9. Speed Control

The speed control should only be adjusted by a qualified service technician. Adjusting the airflow will affect the operation of your hood due to the critical balance required. Remove front snap cap located on the front panel to access the speed control. Use a flat headed screwdriver to adjust speed, turning clockwise to increase speed. After adjustment of the speed control, airflows should be checked to ensure it is within the specified range as outlined in chart. Refer to IES standard IES-RP-CC-002.2.

10. Exhaust System Safety Pressure Switch

This switch is located inside the head section and is connected to the exhaust collar via tubing. In the case of total or partial exhaust failure, this switch will turn off the supply fans, ensuring no air will be blown out of the containment work zone. Supply fans will not run unless tubing is connected.

11. Model Number

The model number is located on the front panel in the lower right hand corner. The serial number and electrical information is also included on this label. Refer to these numbers when contacting the manufacturer.

12. Motor / Electrical

The Total Exhaust Hood uses 115-volt, 90-watt energy efficient motorized impellers to provide excellent airflow distribution, quieter noise levels and low heat loads. Standard on your Total Exhaust Hood is a FT2 type CSA approved 3-prong electrical cord. Always unplug your hood when servicing.

13. Changing Sash Window Cables

Should the event of a sash cable replacement be required lift the window as high as possible and support with two wooden studs cut to length. Remove the interior side panels (LHS and RHS), remove the old cable and support the weight with a temporary 2" high stand (this will compensate for stretching of the cable later). Attach new 1/8" dia. polypropylene rope, with a rating of at least 45lbs, to window end first. Thread through pulleys and secure around weight eyelet with cable as tight as possible.

Always change both ropes at the same time. Consult factory for full rope specifications.

14. Airflow Chart Specifications

Model #	Supply (CFM) (60-70 FPM)	Exhaust (CFM)	Hand Intake (CFM) (100-110 FPM)	Base Vent (CFM)
TXH-4	535	846	271	40
TXH-5	673	1054	341	40
TXH-6	811	1262	411	40
TXH-8	1088	1679	551	40

Calculations are based on an average of: 105 FPM for Hand Intake, and 65 FPM for down flow velocity measured at 6" below diffuser screen.

15. Airflow Direction

When the Total Exhaust Hood is operating, the fans draw lab air into the hood from the top through the pre-filter and the HEPA/ULPA filter, and then pushes the cleaned air down to the work surface. Figure 15.1 shows the direction of airflow in the hood.

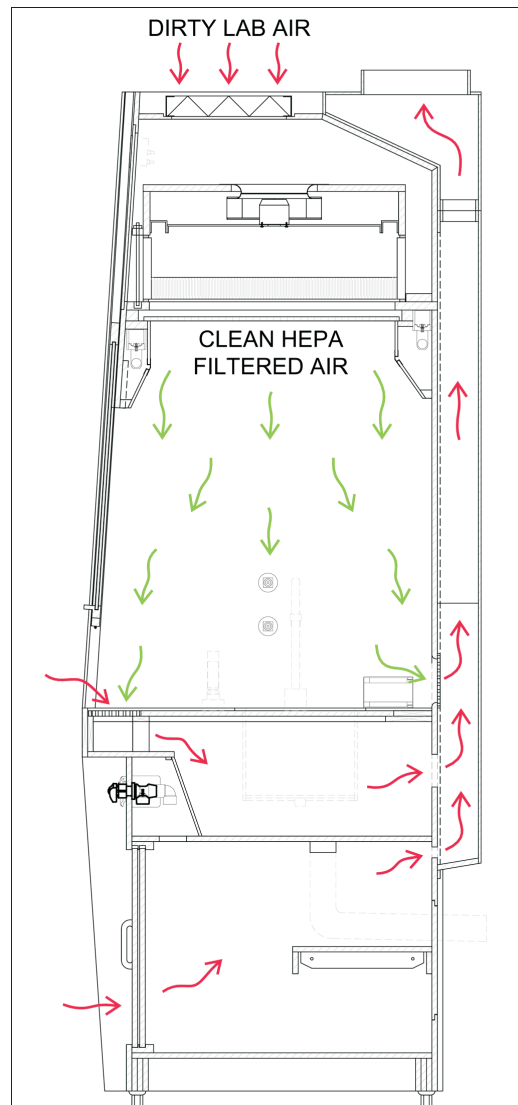


Figure 15.1

16. Dimensions

Model	Exterior Dimensions* (W x D x H)	Collar Size / Qty.	Electrical**
TXH-4	52" x 37¼" x 93"	10" / 1	115V, 1.88A, 60Hz
TXH-5	64" x 37¼" x 93"	10" / 1	115V, 2.55A, 60Hz
TXH-6	76" x 37¼" x 93"	10" / 1	115V, 2.55A, 60Hz
TXH-8	100" x 37¼" x 93"	10" / 2	115V, 4.84A, 60Hz

* Height does not include base frame. ** Includes motors and lights only. Duplex Outlets run on a separate circuit.

For size and weight of shipping crates, contact manufacturer.

17. Replacement Parts

Part	Order Number
Pre-filters nominal 12" x 24 x 2"	12-12242-113
EBM 220 motor	17MOTR2E220AA4423
Motor capacitor	17CAP10MF
Speed Control	17SWSC1150L
TXH-4 HEPA Filter Bead pleat	10-24486-14
TXH-5 HEPA Filter Bead pleat	10-24606-14
TXH-6 HEPA Filter Bead pleat	10-24726-14
TXH-8 HEPA Filter Bead pleat, (quantity 2)	10-24486-14
TXH-4 ULPA Filter Bead pleat	10-24486-16
TXH-5 ULPA Filter Bead pleat	10-24606-16
TXH-6 ULPA Filter Bead pleat	10-24726-16
TXH-8 ULPA Filter Bead pleat, (quantity 2)	10-24486-16
For polypropylene rope replacement consult factory	
For all plumbing components consult factory for full listings	

18. Warranty

Design Filtration Inc. warrants the equipment to be free of defects in materials and workmanship from the date of invoice. The Total Exhaust Hood shall be warranted against defects for a period of three years. Any units or parts found to be defective during this period will be replaced or repaired at our discretion. The buyer agrees to assume all transportation charges prepaid for return of unit to factory for repair. Design Filtration Inc will not accept charges for removal or re-installation. Design Filtration will not accept any returned items without prior written consent. Design Filtration Inc is not responsible for repair or replacement by misuse or abuse by incorrect operating procedures of its equipment. Pre-filters carry no warranty against loading. Any modifications or changes made to equipment by customer without written consent of Design Filtration will void the warranty.

Model number and serial number located on the head section of your Total Exhaust Hood must be provided to verify invoice date. Failure to provide will void warranty.

FOR FURTHER INFORMATION, PLEASE CONTACT US DIRECTLY.

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